

Abstract.

Specimens of electrodeposited iron sheet of a high degree of purity have been found to exhibit remarkable recrystallisation effects when heated above the A_{c3} change and ^{then} cooled below the A_{c3} change. In this way, relatively enormous crystals are formed in three seconds after cooling below A_{c3} . The coarse crystals are sometimes "equi-axed" and sometimes "radial". Frequently both types occur on the same specimen. There is no reason for thinking that they are constitutionally different and they are most probably α iron. These crystallisation effects are only obtained when the thickness of the iron sheet or strip does not exceed a certain critical figure which is between 0.011 and 0.012 of an inch. Once the coarse crystals are formed they cannot be destroyed except either by mechanical work, or by heating above A_{c3} followed by quenching, or by very prolonged heating above A_{c3} followed by ordinary cooling rates.

The very heat treatment which produces coarse crystals in the electro-deposited iron refines wrought iron and very mild steel that have been rendered coarsely crystalline by "close-annealing" between 700° and 800°C . On the other hand annealing at 700° to 800°C . has no effect in coarsening the structure of the electrodeposited iron which has been refined by cold mechanical work. In these respects therefore the behaviour of electrodeposited iron is precisely the opposite of that of wrought iron and mild steel.

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WEINER

A.M.S. 1 p. 4to, no place, no date, "ABSTRACT" dealing with certain remarkable recrystallisation-effects observed in specimens of electro-deposited iron sheets of limited thickness.